IN THE CLAIMS:

1. (Currently amended) A retroviral vector which undergoes promoter conversion comprising in 5' to 3' order,

(a) a 5' long terminal repeat region of the structure U3-R-U5;

(b) one or more coding sequences, said sequences being inserted into the body of the vector; and

(c) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a heterologous promoter has been inserted,

wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said heterologous promoter, resulting in said one or more coding sequences becoming operatively linked to said heterologous promoter and said heterologous promoter regulating expression of said one or more coding sequences in said target cell, and further wherein each long terminal repeat region is derived from a retrovirus selected from the group consisting of Murine Leukemia Virus, Mouse Mammary Tumor Virus, Murine Sarcoma Virus, Simian Immunodeficiency Virus, Human Immunodeficiency Virus, Human T Cell Leukemia Virus, Feline Immunodeficiency Virus, Feline Leukemia Virus, Bovine Leukemia Virus, Mason-Pfizer-Monkey Virus, and combinations thereof.

2-4. (Canceled)

5. (Previously presented) The retroviral vector according to Claim 1, wherein said retroviral vector further comprises a regulatory element other than a promoter.

6. (Canceled)

7. (Previously presented) The retroviral vector according to Claim 1, wherein said heterologous promoter is selected from the group consisting of: a Whey Acidic Protein specific promoter, a Mouse Mammary Tumor Virus specific promoter, β-

lactoglobulin and casein specific promoters, a pancreas specific promoter, a lymphocyte specific promoter, a Mouse Mammary Tumor Virus specific promoter conferring responsiveness to glucocorticoid hormones or directing expression to the mammary gland, and combinations thereof.

8-9. (Canceled)

10. (Previously presented) The retroviral vector according to Claim 1, wherein said retroviral vector is derived from a BAG vector.

11. (Previously presented) The retroviral vector according to Claim 1, wherein the coding sequences are selected from the group consisting of marker genes, therapeutic genes, antiviral genes, antitumor genes, cytokine genes and combinations thereof.

12. (Previously presented) The retroviral vector according to Claim 11, wherein said marker or therapeutic genes are selected from the group consisting of β-galactosidase gene, neomycin gene, Herpes Simplex Virus thymidine kinase gene, puromycin gene, cytosine deaminase gene, hygromycin gene, secreted alkaline phosphatase gene, guanine phosphoribosyl transferase (gpt) gene, alcohol dehydrogenase gene, hypoxanthine phosphoribosyl transferase (HPRT) gene and combinations thereof.

13. (Previously presented) The retroviral vector according to Claim 1, wherein at least one of said coding sequences is a retroviral coding sequence that is an altered or at least partially deleted retroviral gene.

14. (Original) The retroviral vector according to Claim 1, wherein retroviral sequences involved in integration of retroviruses are altered or at least partially deleted.

15. (Previously presented) The retroviral vector according to Claim 1, wherein said vector comprises one or more sequences homologous to one or more cellular sequences or a part thereof.

16. (Previously presented) The retroviral vector according to Claim 5, wherein said regulatory element is regulatable by transacting molecules.

17. (Currently amended) A retroviral vector kit comprising:

(a) a retroviral vector which undergoes promoter conversion comprising in 5' to 3' order,

(i) a 5' long terminal repeat region of the structure U3-R-U5;

(ii) one or more coding sequences, said sequences being inserted into the body of the vector; and

(iii) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a heterologous promoter has been inserted, wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said heterologous promoter, resulting in said one or more coding sequences becoming operatively linked to said heterologous promoter and said heterologous promoter regulating expression of said one or more coding sequences in said target cell; and

(b) a packaging cell line comprising ~~at least~~ one or more retroviral or recombinant retroviral constructs coding for those retroviral proteins required for said retroviral vector to be packaged which are not encoded in said retroviral vector.

18. (Canceled)

19. (Currently amended) The retroviral vector ~~system~~ kit according to Claim 17 wherein the packaging cell line is selected from the group consisting of psi-2, psi-Crypt, psi-AM, GP+E-86, PA317, and GP+envAM-12.

20. (Currently amended) A method for introducing homologous or heterologous nucleotide sequences into cells in an animal or cultured cells, said method comprising infecting the cells with a recombinant retrovirus[[es]] produced by the producer cell line of Claim 28.

21. (Previously presented) The method according to Claim 20, wherein the nucleotide sequences are selected from the group consisting of genes or parts of genes encoding for proteins, regulatory sequences and promoters and combinations thereof.

22. (Currently amended) ~~Recombinant~~ A recombinant retroviral particle obtained by transfecting a packaging cell line ~~of a retroviral vector kit according to Claim 17~~ with ~~the~~ a retroviral vector according to Claim [[17,]] 1 and culturing the cells under suitable conditions.

23. (Currently amended) A retroviral provirus produced by ~~infection of~~ infecting a target cell[[s]] with a recombinant retroviral particle according to Claim 22, whereby the heterologous DNA fragment in the 3' long terminal repeat becomes duplicated during the process of reverse transcription in the target cell and appears in the 5' long terminal repeat as well as in the 3' long terminal repeat of the resulting provirus.

24. (Currently amended) An mRNA molecule encoding by a ~~of the~~ retroviral provirus according to Claim 23.

25. (Currently amended) An RNA molecule encoded by ~~of~~ a retroviral vector according to Claim 1.

26. (Currently amended) ~~Pharmaceutical~~ A pharmaceutical composition ~~containing~~ comprising a therapeutically effective amount of a recombinant retroviral particle according to Claim 22.

27. (Canceled)

28. (Currently amended) A producer cell line producing a retroviral particle, the producer cell comprising a retroviral vector and a DNA construct coding for proteins required for the retroviral vector to be packaged, said retroviral vector comprising in 5' to 3' order,

(a) a 5' long terminal repeat region of the structure U3-R-U5;

(b) one or more coding sequences, said sequences being inserted into the body of the vector; and

(c) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a heterologous promoter has been inserted,

wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said heterologous promoter, resulting in said one or more coding sequences becoming operatively linked to said heterologous promoter and said heterologous promoter regulating expression of said one or more coding sequences in said target cell, and further wherein each long terminal repeat region is derived from a retrovirus selected from the group consisting of Murine Leukemia Virus, Mouse Mammary Tumor Virus, Murine Sarcoma Virus, Simian Immunodeficiency Virus, Human Immunodeficiency Virus, Human T Cell Leukemia Virus, Feline Immunodeficiency Virus, Feline Leukemia Virus, Bovine Leukemia Virus, Mason-Pfizer-Monkey Virus, and combinations thereof.

29. (Currently amended) A recombinant retroviral particle comprising a genome encoded by a ~~the~~ retroviral vector according to Claim 1.

30. (Canceled)

31. (Previously presented) The retroviral vector according to Claim 1, wherein said promoter is target cell specific in its expression.

32. (Previously presented) The retroviral vector according to Claim 5, wherein said regulatory element is target specific in its expression.

33. (Currently amended) A retroviral vector which undergoes promoter conversion comprising in 5' to 3' order,

(a) a 5' long terminal repeat region of the structure U3-R-U5;

(b) one or more coding sequences, said sequences being inserted into the body of the vector; and

(c) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a promoter from a cellular gene has been inserted,

wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said promoter from a cellular gene, resulting in said one or more coding sequences becoming operatively linked to said promoter from a cellular gene and said promoter from a cellular gene regulating expression of said one or more coding sequences in said target cell, and further wherein each long terminal repeat region is derived from a retrovirus selected from the group consisting of Murine Leukemia Virus, Mouse Mammary Tumor Virus, Murine Sarcoma Virus, Simian Immunodeficiency Virus, Human Immunodeficiency Virus, Human T Cell Leukemia Virus, Feline Immunodeficiency Virus, Feline Leukemia Virus, Bovine Leukemia Virus, Mason-Pfizer-Monkey Virus, and combinations thereof.

34. (Previously presented) The retroviral vector according to Claim 33, wherein said vector further comprises a regulatory element other than a promoter.

35. (Previously presented) The retroviral vector according to Claim 33, wherein said promoter is selected from the group consisting of: a Whey Acidic Protein promoter, β-lactoglobulin and casein specific promoters, a pancreas specific promoter, lymphocyte specific promoters, and combinations thereof.

36. (Canceled)

37. (Previously presented) The retroviral vector according to Claim 33, wherein said retroviral vector is derived from a BAG vector.

38. (Previously presented) The retroviral vector according to Claim 33, wherein the coding sequences are selected from the group consisting of marker genes, therapeutic genes, antiviral genes, antitumor genes, cytokine genes and combinations thereof.

39. (Currently amended) The retroviral vector according to Claim 38, wherein said marker or therapeutic genes are selected from the group consisting of β-galactosidase gene, neomycin gene, Herpes Simplex Virus thymidine kinase gene, puromycin gene, cytosine_deaminase gene, hygromycin gene, secreted alkaline phosphatase gene, guanine_phosphoribosyl transferase (gpt) gene, alcohol dehydrogenase gene, hypoxanthine phosphoribosyl transferase (HPRT) gene and combinations thereof.

40. (Previously presented) The retroviral vector according to Claim 33, wherein at least one of said coding sequences is a retroviral coding sequence that is an altered or at least-partially deleted retroviral gene.

41. (Previously presented) The retroviral vector according to Claim 33, wherein retroviral sequences involved in integration of retroviruses are altered or at least partially deleted.

42. (Previously presented) The retroviral vector according to Claim 33, wherein said promoter is regulatable by transacting molecules.

43. (Currently amended) A retroviral vector kit comprising:

(a) a retroviral vector which undergoes promoter conversion comprising in 5' to 3' order,

(i) a 5' long terminal repeat region of the structure U3-R-U5;

(ii) one or more coding sequences, said sequences being inserted into the body of the vector; and

(iii) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a promoter from a cellular gene has been inserted, wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said promoter from a cellular gene, resulting in said one or more coding sequences becoming operatively linked to said promoter from a cellular gene and said promoter from a cellular gene regulating expression of said one or more coding sequences in said target cell; and

(b) a packaging cell line comprising ~~at least~~ one or more retroviral or recombinant retroviral constructs coding for those retroviral proteins required for said retroviral vector to be packaged which are not encoded in said retroviral vector.

44. (Canceled)

45. (Currently amended) The retroviral vector ~~system~~ kit according to Claim [[44]] 43, wherein the packaging cell line is selected from the group consisting of psi-2, psi-Crypt, psi-AM, GP+E-86, PA317, and GP+envAM-12.

46. (Currently amended) ~~Recombinant~~ A recombinant retroviral particle obtained by transfecting a packaging cell line ~~of a retroviral vector kit according to Claim 43~~ with ~~the~~ a retroviral vector according to Claim [[43,]] 33 and culturing the cells under suitable conditions.

47. (Currently amended) A retroviral provirus produced by ~~infection of~~ infecting a target cell[[s]] with a recombinant retroviral particle according to Claim 46, whereby the promoter in the 3' long terminal repeat becomes duplicated during the process of reverse transcription in the target cell and appears in the 5' long terminal repeat as well as in the 3' long terminal repeat of the resulting provirus.

48. (Currently amended) An mRNA molecule encoded by a ~~of the~~ retroviral provirus according to Claim 47.

49. (Currently amended) An RNA molecule encoded by ~~of~~ a retroviral vector according to Claim 33.

50. (Currently amended) ~~Pharmaceutical~~ A pharmaceutical composition ~~containing~~ comprising a therapeutically effective amount of a recombinant retroviral particle according to Claim 46.

51. (Currently amended) A producer cell line producing a retroviral particle, the producer cell comprising a retroviral vector and a DNA construct coding for proteins required for the retroviral vector to be packaged, said retroviral vector comprising in 5' to 3' order,

(a) a 5' long terminal repeat region of the structure U3-R-U5;

(b) one or more coding sequences, said sequences being inserted into the body of the vector; and

(c) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a promoter from a cellular gene has been inserted,

wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said promoter from a cellular gene, resulting in said one or more coding sequences becoming operatively linked to said promoter from a cellular gene and said promoter from a cellular gene regulating expression of said one or more coding sequences in said target cell, and further wherein each long terminal repeat region is derived from a retrovirus selected from the group consisting of Murine Leukemia Virus, Mouse Mammary Tumor Virus, Murine Sarcoma Virus, Simian Immunodeficiency Virus, Human Immunodeficiency Virus, Human T Cell Leukemia Virus, Feline Immunodeficiency Virus, Feline Leukemia Virus, Bovine Leukemia Virus, Mason-Pfizer-Monkey Virus, and combinations thereof.

52. (Previously presented) A method for introducing homologous or heterologous nucleotide sequences into cells in an animal or cultured cells, said method comprising infecting the cells with a recombinant retrovirus[[es]] produced by the producer cell line of Claim 51.

53. (Previously presented) The method according to Claim 52, wherein the nucleotide sequences are selected from the group consisting of genes or parts of genes encoding for proteins, regulatory sequences and promoters and combinations thereof.

54. (Currently amended) A recombinant retroviral particle comprising a genome encoded by a ~~the~~ retroviral vector according to Claim 33.

55. (Previously presented) The retroviral vector according to Claim 33, wherein said promoter is target cell specific in its expression.

56. (Currently amended) A retroviral vector which undergoes promoter conversion comprising in 5' to 3' order,

(a) a 5' long terminal repeat region of the structure U3-R-U5;

(b) one or more coding sequences, said sequences being inserted into the body of the vector; and

(c) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a heterologous retroviral promoter has been inserted,

wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said heterologous retroviral promoter, resulting in said one or more coding sequences becoming operatively linked to said heterologous retroviral promoter and said heterologous retroviral promoter regulating expression of said one or more coding sequences in said target cell, and further wherein each long terminal repeat region is derived from a retrovirus selected from the group consisting of Murine Leukemia Virus, Mouse Mammary Tumor Virus, Murine Sarcoma Virus, Simian Immunodeficiency Virus, Human Immunodeficiency Virus, Human T Cell Leukemia Virus, Feline Immunodeficiency Virus, Feline Leukemia Virus, Bovine Leukemia Virus, Mason-Pfizer-Monkey Virus, and combinations thereof.

57. (Previously presented) The retroviral vector according to Claim 56, wherein said vector further comprises a regulatory element other than a promoter.

58. (Previously presented) The retroviral vector according to Claim 56, wherein said promoter is selected from the group consisting of a Mouse mammary Tumor specific promoter, a Mouse Mammary Tumor Virus specific promoter conferring responsiveness to glucocorticoid hormones or directing expression to the mammary gland, and combinations thereof.

59. (Canceled)

60. (Previously presented) The retroviral vector according to Claim 56, wherein said retroviral vector is derived from a BAG vector.

61. (Previously presented) The retroviral vector according to Claim 56, wherein the coding sequences are selected from the group consisting of marker genes, therapeutic genes, antiviral genes, antitumor genes, cytokine genes and combinations thereof.

62. (Previously presented) The retroviral vector according to Claim 61, wherein said marker or therapeutic genes are selected from the group consisting of β-galactosidase gene, neomycin gene, Herpes Simplex Virus thymidine kinase gene, puromycin gene, cytosine deaminase gene, hygromycin gene, secreted alkaline phosphatase gene, guanine phosphoribosyl transferase (gpt) gene, alcohol dehydrogenase gene, hypoxanthine phosphoribosyl transferase (HPRT) gene and combinations thereof.

63. (Previously presented) The retroviral vector according to Claim 56, wherein at least one of said coding sequences is a retroviral coding sequence that is an altered or at least partially deleted retroviral gene.

64. (Previously presented) The retroviral vector according to Claim 56, wherein retroviral sequences involved in integration of retroviruses are altered or at least partially deleted.

65. (Previously presented) The retroviral vector according to Claim 56, wherein said promoter is regulatable by transacting molecules.

66. (Currently amended) A retroviral vector kit comprising:
(a) a retroviral vector which undergoes promoter conversion comprising in 5' to 3' order,
(i) a 5' long terminal repeat region of the structure U3-R-U5;
(ii) one or more coding sequences, said sequences being inserted into the body of the vector; and

(iii) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a heterologous retroviral promoter has been inserted, wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said heterologous retroviral promoter, resulting in said one or more coding sequences becoming operatively linked to said heterologous retroviral promoter and said heterologous retroviral promoter regulating expression of said one or more coding sequences in said target cell; and

(b) a packaging cell line harboring ~~at least~~ one or more retroviral or recombinant retroviral constructs coding for those retroviral proteins required for said retroviral vector to be packaged which are not encoded in said retroviral vector.

67. (Canceled)

68. (Currently amended) The retroviral vector ~~system~~ kit according to Claim 66, wherein the packaging cell line is selected from the group consisting of psi-2, psi-Crypt, psi-AM, GP+E-86, PA317, and GP+envAM-12.

69. (Currently amended) ~~Recombinant~~ A recombinant retroviral particle obtained by transfecting a packaging cell line ~~of a retroviral vector kit according to Claim 66~~ with ~~the~~ a retroviral vector according to Claim [[66,]] 56 and culturing the cells under suitable conditions.

70. (Currently amended) A retroviral provirus produced by ~~infection of~~ infecting a target cell[[s]] with a recombinant retroviral particle according to Claim 69, whereby the promoter in the 3' long terminal repeat becomes duplicated during the process of reverse transcription in the target cell and appears in the 5' long terminal repeat as well as in the 3' long terminal repeat of the resulting provirus.

71. (Currently amended) An mRNA molecule encoded by a ~~of the~~ retroviral provirus according to Claim 70.

72. (Currently amended) An RNA molecule encoded by ~~of~~ a retroviral vector according to Claim 56.

73. (Currently amended) ~~Pharmaceutical~~ A pharmaceutical composition ~~containing~~ comprising a therapeutically effective amount of a recombinant retroviral particle according to Claim 69.

74. (Currently amended) A producer cell line producing a retroviral particle, the producer cell comprising a retroviral vector and a DNA construct coding for proteins required for the retroviral vector to be packaged, said retroviral vector comprising in 5' to 3' order,

(a) a 5' long terminal repeat region of the structure U3-R-U5;

(b) one or more coding sequences, said sequences being inserted into the body of the vector; and

(c) a 3' long terminal repeat region comprising a partially deleted U3 region into which a polylinker sequence containing a heterologous retroviral promoter has been inserted,

wherein after infection of a target cell, said U3 of said 5' long terminal repeat region is replaced by said partially deleted U3 region and said heterologous retroviral promoter, resulting in said one or more coding sequences becoming operatively linked to said heterologous retroviral promoter and said heterologous retroviral promoter regulating expression of said one or more coding sequences in said target cell, and further wherein each long terminal repeat region is derived from a retrovirus selected from the group consisting of Murine Leukemia Virus, Mouse Mammary Tumor Virus, Murine Sarcoma Virus, Simian Immunodeficiency Virus, Human Immunodeficiency Virus, Human T Cell Leukemia Virus, Feline

Immunodeficiency Virus, Feline Leukemia Virus, Bovine Leukemia Virus, Mason-Pfizer-Monkey Virus, and combinations thereof.

75. (Currently amended) A method for introducing homologous or heterologous nucleotide sequences into cells in an animal or cultured cells, said method comprising infecting the cells with a recombinant retrovirus[[es]] produced by the producer cell line of Claim 74.

76. (Previously presented) The method according to Claim 75, wherein the nucleotide sequences are selected from the group consisting of genes or parts of genes encoding for proteins, regulatory sequences and promoters and combinations thereof.

77. (Currently amended) A recombinant retroviral particle comprising a genome encoded by a ~~the~~ retroviral vector according to Claim 56.

78. (Previously presented) The retroviral vector according to Claim 56, wherein said promoter is target cell specific in its expression.

79-101. Canceled.